## REMARKS

Claims 16, 18 and 21-36 are pending in this application. By this Amendment, independent claims 16, 34, and 35 are amended. Support for the amendment to claims 16, 34, and 35 can be found in the specification, for example, in Fig. 6 and on page 4, line 27 - page 5, line 7. No new matter is added.

The courtesies extended to Applicant's representative by Examiner Chu at the interview held June 30, 2009 are appreciated. The reasons presented at the interview as warranting favorable action are incorporated in the remarks below, which constitute Applicant's record of the interview.

The Office Action rejects claims 16, 18, 21-23, 26-28, 33, 35 and 36 under 35 U.S.C. §103(a) over Wan (U.S. Patent No. 7,429,495) in view of Cheung (U.S. Patent Application Publication No. 2004/0126953); rejects claims 24 and 25 under 35 U.S.C. §103(a) over Wan in view of Cheung and further in view of Murari et al. (U.S. Patent No. 6,779,247, hereinafter "Murari"); rejects claims 30 and 32 under 35 U.S.C. §103(a) over Wan in view of Cheung and further in view of Reichenbach et al. (U.S. Patent Application Publication No. 2004/0065932, hereinafter "Reichenbach"); and rejects claim 34 under 35 U.S.C. §103(a) over Wan, Cheung and further in view of McNeil et al. (U.S. Patent No. 6,352,874, hereinafter "McNeil"). The rejections are respectfully traversed.

Wan and Cheung do not teach, and would not have rendered obvious, every claimed feature of independent claims 16, 34, and 35. Wan and Cheung do not teach, and would not have rendered obvious, "a plug forming a <u>unitary piece</u> made of polymer covering only one hole and a part of the cover over the periphery of the hole," as recited in independent claims 16 and 35, and as similarly recited in independent claim 34 (emphasis added).

The Office Action on page 3 asserts that col. 6, lines 52-62 of Wan teach an alleged plug. However, Wan merely teaches sealing a plurality of holes 40 with a plurality of layered

films 44, which can be deposited by the following deposition techniques: (1) vacuum evaporation while the substrate is tilted and rotated; (2) plasma-enhanced chemical-vapor deposition; and (3) sputtering (see col. 6, lines 40-52 of Wan). Wan does not disclose a unitary piece polymer plug covering only one hole and a part of the cover over the periphery of the hole. Therefore, Wan does not teach, and would not have rendered obvious, all of the claimed features of independent claims 16, 34, and 35.

Further, Wan and Cheung should be considered as equivalents because both of them disclose only a sealing layer (film layer 44 of Wan and material layer 46 of Cheung) covering simultaneously all the access holes for hermetically sealing the microcavity. The film layer 44 of Wan, which is made of a metal or a dielectric, and the material layer 46 of Cheung, which is made of metal, are to be compared with the sealing layer 9 of the present application. However, neither the film layer 44 of Wan, nor the material layer 46 of Cheung can be compared with the unitary polymer plugs, as recited in independent claims 16, 34 and 35.

Cheung discloses only three examples of metals (Al, Au and Cu) to be used as a sealing layer and two of these metals (aluminum and gold) are also mentioned in the Wan list of metals to be used for the corresponding sealing layer. There is no reason for adding to Wan a further metal layer according to Cheung, for example a layer made of Al, Au or Cu. Even such a combination would not lead to the unitary polymer plugs, as recited in independent claims 16, 34 and 35.

Further, Wan merely discloses a film 44 made of a polycrystalline compound, not a polymer compound. Applicants note that a polymer is a large molecule (macromolecule) composed of repeating structural units typically connected by covalent chemical bonds and that conventionally, $SiO_2$ represents the molecular silicon dioxide. $SiO_2$ has a polycrystalline microstructure having a number of distinct crystals in addition to amorphous forms. All

crystalline forms of the $SiO_2$ involve tetrahedral $SiO_4$ units arranged together by intermolecular forces but are not linked by covalent chemical bonds and repeated like a polymer (see attached Wikipedia article).

$SiO_2$ must be differentiated from silicones (polysiloxane) which are polymers including carbon, hydrogen and oxygen. Therefore, the above characteristics distinguish a polycrystalline compound, as disclosed in Wan, from a polymer, as recited in independent claims 16, 34 and 35.

Further, McNeil, Murari, and Reichenbach do not remedy the above-described deficiencies of Wan and Cheung.

Therefore, for at least these reasons, independent claims 16, 34, and 35 are patentable over the above-applied references. Claims 18, 21-28, 30, 32, 33, and 36 depend from independent claims 16 and 35 respectively, thus, claims 18, 21-28, 30, 32, 33 and 36 are also patentable over the applied references for at least their dependency on independent claims 16 and 35, as well as for the additional features they recite.

Thus, Applicant respectfully requests withdrawal of the rejection.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

William P. Berridge
Registration No. 30,024

Michael D. Gagliano
Registration No. 62,037

WPB:MDG/add

Attachment:
Wikipedia Article for "Polymer"

Date: August 14, 2009

**OLIFF & BERRIDGE, PLC**
**P.O. Box 320850**
**Alexandria, Virginia 22320-4850**
**Telephone: (703) 836-6400**

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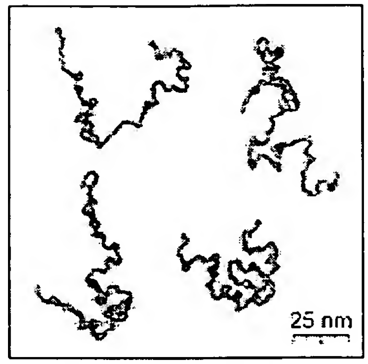
# Polymer

From Wikipedia, the free encyclopedia



Appearance of real linear polymer chains as recorded using an atomic force microscope on surface under liquid medium. Chain contour length for this polymer is ~204 nm; thickness is ~0.4 nm.[1]

A **polymer** (from Greek πολύ-ς /po΄li-s/ much, many and μέρος /΄meros/ part) is a large molecule (macromolecule) composed of repeating structural units typically connected by covalent chemical bonds. While *polymer* in popular usage suggests plastic, the term actually refers to a large class of natural and synthetic materials with a variety of properties.

Due to the extraordinary range of properties accessible in polymeric materials [2], they have come to play an essential and ubiquitous role in everyday life[3] - from plastics and elastomers on the one hand to natural biopolymers such as DNA and proteins that are essential for life on the other. A simple example is polyethylene, whose repeating unit is based on ethylene (IUPAC name *ethene*) monomer. Most commonly, as in this example, the continuously linked backbone of a polymer used for the preparation of plastics consists mainly of carbon atoms. However, other structures do exist; for example, elements such as silicon form familiar materials such as silicones, examples being silly putty and waterproof plumbing sealant. The backbone of DNA is in fact based on a phosphodiester bond, and repeating units of polysaccharides (e.g. cellulose) are joined together by glycosidic bonds via oxygen atoms.

Natural polymeric materials such as shellac, amber, and natural rubber have been in use for centuries. Biopolymers such as proteins and nucleic acids play crucial roles in biological processes. A variety of other natural polymers exist, such as cellulose, which is the main constituent of wood and paper.

The list of synthetic polymers includes synthetic rubber, Bakelite, neoprene, nylon, PVC, polystyrene, polyethylene, polypropylene, polyacrylonitrile, PVB, silicone, and many more.

Polymers are studied in the fields of polymer chemistry, polymer physics, and polymer science.

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